

MAPPING OF POTENTIAL OF PORANG PLANT AS EXPORT COMMODITY

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Abstract

Ngawi has considerable forest area, either owned forests Forestry and Plantation Agency and owned by Perum Perhutani. These forests, automatically have forest land area under tree stands quite spacious as well, and is very suitable for planting Porang. In the end it can be said the forest is a potential for mapping the potential for plants Porang empowered. Against the backdrop of these conditions, this study aims to: 1. Identify Potential Land Plants Porang, to identify the extent of land to potential mapping Porang plants. The technical potential mapping on the basis of the terms Porang grow crops, such as: the suitability and condition of land; setempatyang weather and climate is very suitable for plant growth Porang. 2. Analyzing Potential Mapping Strategies Porang plants, based on the SWOT method, ie factor strengths, weaknesses, opportunities and threats. The final results of this research to empower potential mapping strategy Porang plant in the district of Ngawi results of this study ultimately expected to empower the economy and welfare of the Farmers Forest (Pesanggem) local.

Keywords: Potential Mapping, Porang Plant.

BACKGROUND

Poverty issue is the main problem to overcome national can not be delayed and should be a top priority in the implementation of economic development towards the welfare of the farming community. One strategy to accelerate poverty reduction needs to be done empowerment manage natural resources and human resources, especially the Pesanggem / Farmers Forest, located in the district of Ngawi, East Java Province.

Forest as an ecosystem not only save natural resources such as wood alone but still a lot of potential non-wood that can be taken by society through the cultivation of agricultural crops on forest land. The farming activities are expected to bring benefits in terms of both economic and ecological terms, which will remain in soil fertility can be maintained without changing the main function. Activities that can be done by communities around the forest in order to utilize the land under stands of staple crops forestry, usually in the form of crop intercropping among others by planting: rice, corn, oranges, papaya, pineapple, chilli, Intersection pepet blimbing, watermelon, vanilla, and porang.

Ngawi Regency, based economy in the agricultural sector, especially forestry sub sector which has the potential of natural resources such as forest land. Ngawi has an area of 39,500 hectares of state forest and private forest covering an area of 844 ha., Of the area of the productive area of 34600.60 hectares. Of productive forest area will then be held pemetakan land area stands whose condition is potentially possible in the empowerment of cultivation Porang. Against the backdrop of the potential conditions of natural resources in the form of productive forest could possible identify potential Porang plants, then we propose the title of the study: "Mapping Potential Plant Porang As Export Commodities"
Objective, namely to:

- 1) Identify Potential Plant Porang in productive forest area in Ngawi.
- 2) Analyze potential mapping empowerment strategy Porang crops in productive forest area in Ngawi.

Urgency / primacy of the early stages of this study to determine the extent of potential mapping of land stands in potentially productive forest areas for plants Porang, (see Figure 1). Urgency / primacy next phase of research final results in the research was the realization Mapping Potential Plant Porang as an export commodity, all of these activities is very urgent to improve the region's economic development, so that in the end the urgency of this research can improve the original income Ngawi, and revenue Society Pesanggem local.



Gambar : Kebun Porang di Hutan Jati yg terawat

Figure 1: Potential Plant Under Porang Jati Plant Stands

The term Plant Porang

According C.A. Backer and RG. Bakhuizen vd Brink Jr (1968) in Java alone there are eight types of Amorphophallus (Porang). Some Amorphophallus which are found in Java is Amorphophallus campanulatus forma hortensis (suweg), Amorphophallus campanulatus forma sylvestris (Walur), Amorphophallus onchophyllus (Porang) and Amorphophallus variabilis (Iles White). Some local name Amorphophallus tribal designation as follows:

- (a) Amorphophallus campanulatus f. hortensis: suweg (Javanese and Sundanese); Sobek (Madura).
- (b) Amorphophallus campanulatus f. sylvestris: Walur (Java)
- (c) Amorphophallus variabilis: Iles White (Java)
- (d) Amorphophallus onchophyllus: Porang (Java), acung / Cocoon oray / Iles (Sunda) and Kruwu / lorkong / Labig / Subeg Bali / Subeg leres (Madura).

Classification of Plant Porang

Classification of plant systematics porang in plant taxonomy is as follows:

- Division : Spermatopytha
- Sub division : Angiospermae
- Class : Monocotyledonae
- Order : Araceales
- Family : Araceae
- Genus : Amorphophallus
- Species: Amorphophallus onchophyllus

Terms of Growing Plants Porang

a). Climatic Conditions

Porang plants have special properties which have a very high tolerance to shade or shade (hold the place shady) .Tanaman Porang require maximum light only up to 40% .Tanaman Porang can be grown at altitudes 0-700 m asl. But based on experience, optimal height to produce a good tuber production is having a height of 100-600 m above sea level. Porang plants can adapt in the lowlands to an altitude of 900 m above sea level. Porang plants require an average daily temperature of 25 C -35 C, and the amount of annual rainfall between 1000 -1500 mm.

b). Soil state

For best results, plant Porang requires loose soil / fertile and does not tarnish (inundated). The ideal soil acidity degree is between pH 6-7 and the condition of any type of soil. So in principle porang can grow in different types of soil, especially sandy loam berstektur and clean of weeds. But to generate optimal tubers, plants porang requires loose soil / fertile and does not tarnish (inundated).

c). Environmental conditions

The ideal shade for crops Porang is kind of Teak, Mahogany Sono, and others, the principal there is shade and protected from fire. The density of shade at least 40% so that the closer the better. To harvest, crop porang can be done after the age of 3 years (3 times harvesting).

METHODS

Research Sites

The location of research carried out in the vicinity of forest areas Ngawi regency. Decision location as the sample is done deliberately, on the basis of the result of coordination with the Department of Forestry & Plantation and Perhutanioffice Ngawi, ie been productive forest land with stands of huge potential for planting Porang. The name of the village and district as the location of this research is in the four-point locations, as follows:

- 1) Desa Babadan District of Paron
- 2) Village Bangunrejo Lor District of Pitu
- 3) Village Banjarbanggi District of Pitu
- 4) Village Bangunrejo Kidul District Kedung Galar

Type, Technique Extraction and Data Sources

The type of data that is required in the form of primary and secondary data. Sources of primary data obtained from the farming community, merchants, officials / staff offices: Forestry & Plantation, and Perhutani as respondents. While the technique of data collection via questionnaires. The main points of the questionnaire, both for Officials of related agencies and farmers Porang, include: the identity of the respondent, the conditions: climate, soil and the environment against the conformity requirements grow crops Porang. Hasil SWOT questionnaires were analyzed, which include: aspects of the condition Strength (strenghts), weakness (weakness), Opportunities (Opportunities) and threats (Threats). Sources of secondary data obtained from the data agencies / institutions concerned, either in the form of figures in quantity and descriptive information, which is related to the potential and development of crop cultivation Porang. In detail, the main points of the contents of the questionnaire can be seen in Table 1.

Table 1. Principal Content Questionnaire and the Area of Potential Mapping PembibitanTanaman Porang

No.	Commentary	Target object	Indicator
1.	Identity of Respondents	Community Farmers and officials / staff related agencies	Residents and local officials Agency
2.	Identification of Productive Forests	Officials / Staff Office related	Forest land suitable for Porang
3.	Suitability Requirements Growing Crop Porang	Community Farmers and officials / staff related agencies	Condition: Climate, Soil and Environment
4.	Mapping Potential Plant Porang	Community Farmers and officials / staff related agencies	Strengths, Weaknesses, Opportunities & Barriers

Data analysis

The data were analyzed TIN Operates: Descriptive, Tabulation and pictures, as for Quantitative Analysis SWOT Analysis Form. SWOT analysis is a strategy development The analysis is based is shown to the Conditions Strength (strenghts), weakness (Weakness), Opportunities (Opportunities) and threats (Threats) as a factor. The SWOT analysis procedure can be Seen as hearts Table 2.

Table 2. SWOT Analysis Procedure

Factors SWOT	Weight	Rating	Weight x Rating	Comment
<i>Internal Factors:</i>				
a. Strength (S) :				
-				
-				
Factors SWOT	Weight	Rating	Weight x Rating	Comment
b. Weakness (W) :				
-				
-				
<i>External Factors:</i>				
a. chance (O) :				
-				
-				
b. Threat (T) :				
-				
-				

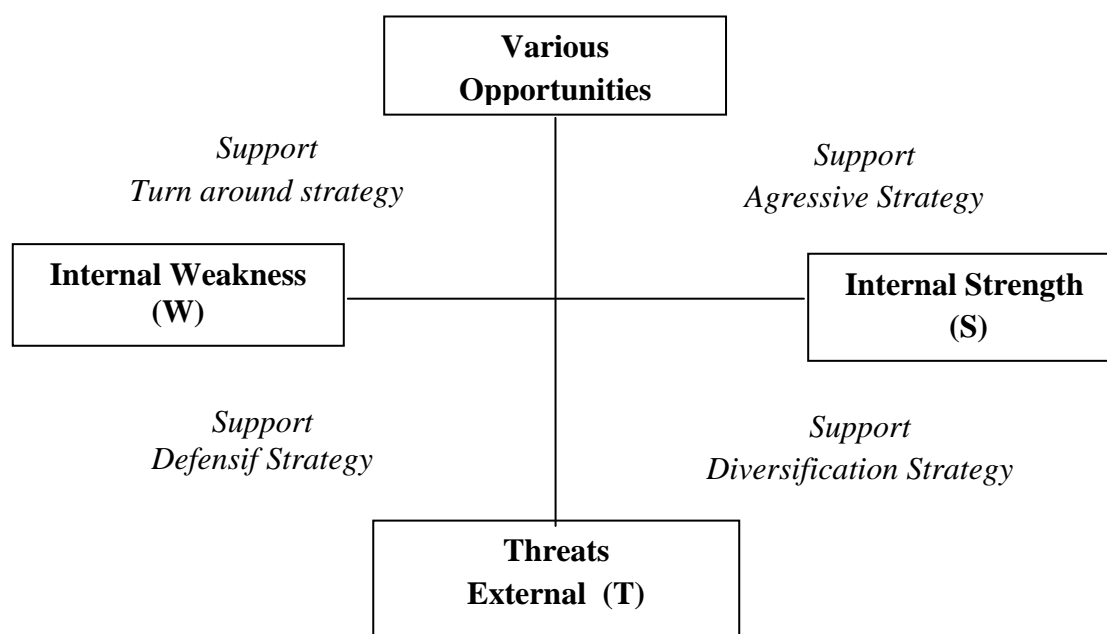
After the data / information is gathered, the next processing step is to perform data classification, to determine the interpretation and mapping of potential Porang Plant. Data were analyzed using *descriptive analysis and SWOT analysis (Strenghts, Weaknesses, Opportunities and Threats)*, which describes clearly and in detail: Strengths and Weaknesses Opportunities and Threats Internal and External. Diagrams such as SWOT matrix in Table 3, according to Rangkuti F. (2001).

Table 3. Diagram SWOT Matrix

IFAS EFAS	STRENGTHS (S) 5-10 Determining factors internal strength	WEAKNESSES (W) 5-10 Determining factors internal weaknesses
OPPRUNITIES (O) 5-10 Determining factors external opportunities	STRATEGI SO Creating a strategy of using force to take advantage of opportunities	STRATEGI WO Create strategies to minimize your weaknesses to take advantage of opportunities
THREATS (T) 5-10 Determining factors external threats	STRATEGI ST Creating a strategy of using force to minimize threats	STRATEGI WT Create strategies that minimize the weaknesses to avoid threats

In the SWOT matrix formulation there are four main strategies, namely:

1. S O (S - O)
Using the power (strengths) of the company to take advantage of opportunities (opportunities) as much as possible.
2. S T (S - T)
Using the power (strengths) of the company to avoid and overcome the threats (threats).
3. W O (W - O)
Trying to profit by minimizing weaknesses (weaknesses) .and take advantage of opportunities (opportunities).

**Figure 2 SWOT Matrix Analysis Diagram**

4. W T (W - T)

Basically this strategy is to survive, its main activities is to minimize weaknesses (weaknesses) and avoid threats (threats)

From the results of the SWOT analysis can then be generated Potential Mapping Strategies Porang Plant as in Figure 2.

Framework Research

In this study based on the basic conditions:

- 1) Object Mapping Potential Plant research is Porang in Ngawi regency.
- 2) The focus of the research objects include: Land Area of Potential Plant Identikasi Porang; Plants growing technical standard requirements Porang as export commodity.
- 3) Research Potential Mapping Plants form Porang as export commodity.

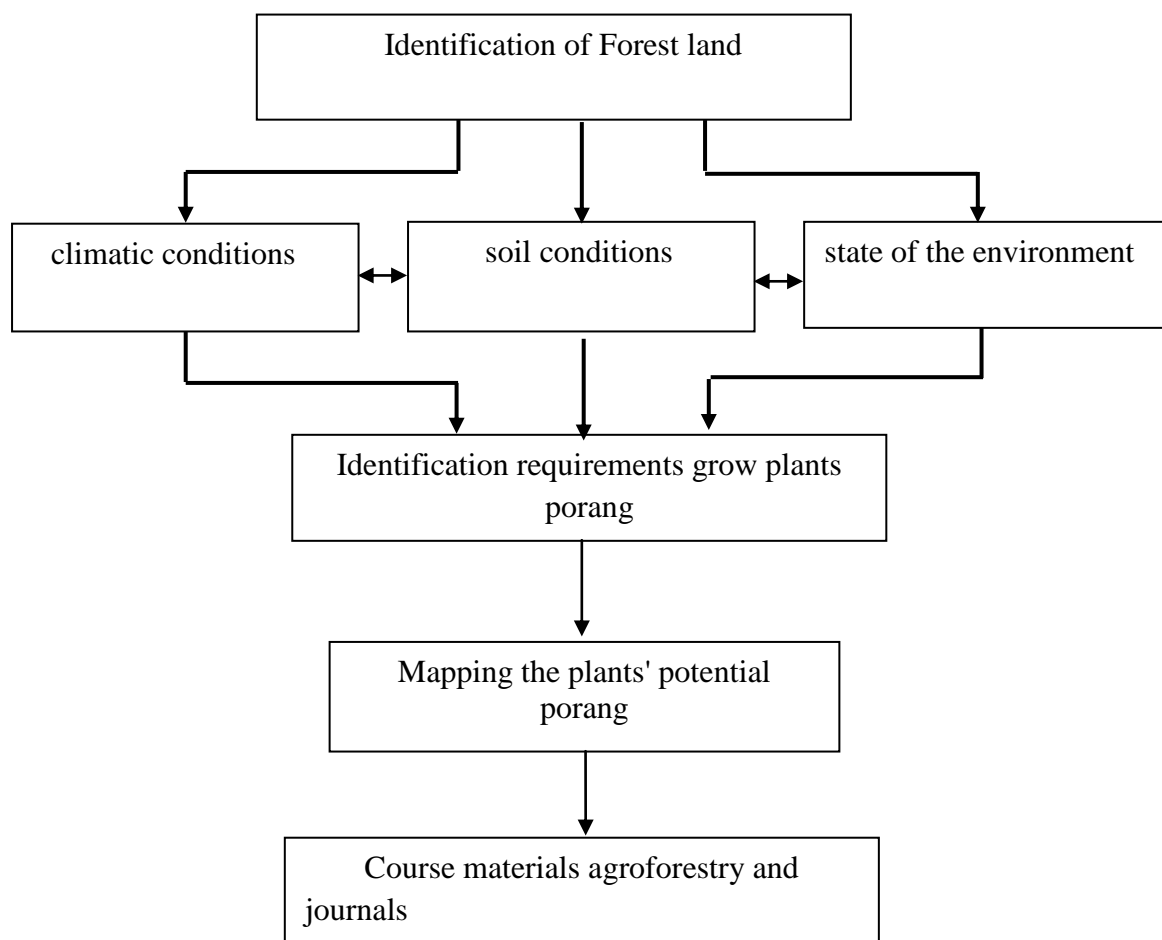


Figure 3. Research Thinking Flow Framework

From the stage of the research framework, then it can be arranged Framework Flow Thought in this study, as can be seen in Figure 3 on page 7.

RESULT AND DISCUSSION

a. Identification of Potential Forest Land

Of the state forest area 39.500 ha. in Ngawi, potentially amounting to 34979.30 hectares, according to data from the Department of Forestry and Plantation and Perum Perhutani. Of the potential of the productive forest area 34600.60 hectares. Located in 70 villages, and is staffed by 70 Forest Village Community Institution (LMDH). The potential of

forest land to the Land Use Under Stand (PLDT) for Medicinal Plants Porang-empon and is an area of 23483.70 hectares.

b. Identification of Potential Land Cultivation Porang

In general, the potential land for cultivation in the district of Ngawi Porang arable Porang, is an area of 23483.70 hectares. While the potential of the area is forest land that can be planted Porang 12295.30 hectares, spread across several sub-districts and villages, as can be seen in Table 4.

Table 4. Distribution of Crop Land area Porang In District and the village of Ngawi regency in 2016

No	Districts	Village	Forest Village Society	Large (ha)
1	Karanganyar	Karanganyar	Sumber Rejeki	196,2
2	Karanganyar	Pandean	Wono Dadi	63,8
3	Karanganyar	Gembol	Tani Mulyo	25,4
4	Kedunggalar	Bangunrejo Kidul	Jati Luhur	103,3
5	Kedunggalar	Jenggrik	Wono Dadi Lestari	18,3
6	Pitu	Banjarbanggi	Wono Dadi	47,3
7	Pitu	Bangunrejo Lor	Bangun Wana	383,0
8	Pitu	Karanggeneng	Yasa Wana Lestari	194,5
9	Kendal	Patalan	Sido Makmur	133,2
10	Kendal	Majasem	Karya Mulya	2,5
11	Jogorogo	Soco	Goncang Lestari	15,7
12	Jogorogo	Dawung	Jati Kencana	35,5
13	Ngrambe	Krandegan	Wono Sedyo Mulyo	41,8
14	Ngrambe	Setono	Lindu Mas	27,3
15	Paron	Babadan	Wono Bhekti	4
16	Paron	Semen	Wono Lestari	3,5
Total				1295,3

Source: Forestry and Perum Perhutani Office of Kab. Ngawi 2016.

c. Identification of Porang Potential Mapping Strategies

Identification of Porang Potential Crop mapping strategy, covering internal factors and external factors. Internal factors such as Factor Strength and Weakness, while the external factors of Opportunity Factor and Threat in Porang cultivation in Ngawi District.

Identification of strength factor such as: Potential of planting area; Porang is very high economic value; Porang has multiple uses in life; Land suitability conditions; And Treatment of Porang cultivation is quite simple.

Identification of weakness factors such as: Porang plant length; Quality of Porang seeds; Low HR skills; Low HR Knowledge & Experience; And weak capital;

Identification of opportunity factors such as: Government policy support; Policy Support Related agencies; Wide export market opportunities; Support of capital institution; And Support of information & transportation facilities and infrastructure.

Identification of threat factors in the form of: Competition among fellow entrepreneurs; Product certification; Export policy; The conditions of trade liberalization; And Forest fire disaster.

d. Analysis of Porang Potential Mapping Strategy

The determination of Porang Plant Potential mapping strategy starts from data collection and information stages both related to internal factors and external factors related to the existence of Porang plant potential as export commodity in Ngawi regency.

Internal Factor Analysis (IFAS) Potential Pacing Mapping Strategy

From a series of data and information that has been collected can be assessed whether these factors are a strength or weakness for the diversity of Porang plant potential mapping strategy as an export commodity in the region of Ngawi Regency.

Explanation of Each - Factor Strengths and Weaknesses:

Power Factors

- 1) Potential area of planting: from existing data recorded forestry area in Ngawi District of 12,265.30 Ha., Of the area is still not cultivated Porang plant intensively. So the potential area for Porang plant is still very wide, which is 12,265.30 Ha. For the utilization of the potential is very necessary for further empowerment, so it is a strength in empowerment potential Porang cultivation.
- 2) Porang very high economic value: The economic value of Porang is very high compared with empon-empon and other similar plants, so Porang has the potential to increase the income of farmers and Ngawi District's Original Revenue. These conditions as a source of motivation in the spirit of the performance of farmers in other words can be a source of potential strength in empowerment of Porang in Ngawi District.
- 3) Porang has multi-use in life: Because of the multi-use of Porang's results, it is a potential strength in Porang's empowerment, it must be balanced with more creative and innovative treatment in post-harvest Porang processing diversity, in order to accelerate the success of Porang's empowerment objectives in Ngawi District .
- 4) Land suitability conditions: From extensive data of forest potential and followed by land suitability conditions that are suitable for Porang cultivation for the land under the auspices of its stands, it is a very positive force for the potential of Porang cultivation in Kabupayen Ngawi.
- 5) The cultivation treatment of Porang is quite simple: In cultivating Porang, it turns out that the Porang cultivation technique is quite simple, in the sense that Porang can flourish in various forestry areas without any complicated cultivation, even more fertile planting under stands and shade for all Types of forest plants. The condition is clear as a potential strength in the development of Porang cultivation in Ngawi District.

Weakness Factors

- 1) The length of the Porang plant life: In Porang cultivation, the age of planting Porang up to 3 years, this is a weakness especially in capital, because the new enjoy the harvest later in the fourth year. As an alternative solution to maintain the survival of farmers and their families, the condition is in need of good cultivation management, for example by planting short-lived intercrops to cope with other income for 3 years of unproductive Porang plant.
- 2) Quality of Porang seedlings: The quality of Porang seeds used is still local quality, often seedlings are still looking in hilly areas, it is debilitating in cultivating Porang in Ngawi District.
- 3) Low Human Resource Skills: The average skills of farmers in cultivating Porang is still low, because only 1-2 years they start Porang cultivation, so it can be said not enough to have adequate skills. So skill is a weakness factor in empowerment of Porang cultivation in Ngawi District.
- 4) Low Knowledge and Experience of HR: The average knowledge and experience of farmers in cultivating Porang is still low, because it is only 1-2 years they started it, so it is a weakness factor in empowerment of Porang cultivation in Ngawi District.
- 5) Low capital: Generally, Porang farming is costly, big enough, according to the calculation analysis from Dinas Kehutanan dan Perkebunan, the average cumulative cost of Porang

farm until 3 years is around Rp. 9.500.000,00. Per hectare While the condition of the capital of the farmers is inadequate, it is weakened in the empowerment of Porang cultivation in Ngawi District.

External Factor Analysis (EFAS) Potential Paging Mapping Strategy

External factors are a factor of opportunity (opportunities) and threats.

Opportunity Factors

- 1) Government policy support: through the policy and implementation of the program will spur the increase of production and marketing of the product both in facilitation and ease in accessing capital of Porang cultivation.
- 2) Support of related institutions: based on the support of related institutions, namely Forestry and Estate Crops Office, Perhutani Office, Environment Agency and Regency Government Institution. Ngawi as a policy regulation, clearly open up opportunities for development and empowerment of potential Porang cultivation in the future, it is necessary to continuously improve the working relationship and coordination among related institutions.
- 3) Opportunity of open export market: the guarantee of certainty in the market demand, and information so far the demand is still far to be fulfilled, from a number of requests of Porang of 200 tons per year on certain quality standards, still fulfilled about 7 tons per year, Therefore during the increase in Porang production in addition to strive to maintain its quality standards, with a wide open marketing, to the export market will be met.
- 4) Capital funding support: banks and cooperatives as a formal capital back-up and capital for farmers of Porang agriculture that require substantial initial capital, it will further open opportunities to empower potential Porang development in the future .
- 5) Support of information and transportation facilities and infrastructure: although some roads are still inadequate, but overall transportation facilities and infrastructures have been relatively adequate, the condition is quite supportive of successful empowerment of Porang cultivation, especially in marketing its marketing aspect.

Threat Factors

- 1) Competition among entrepreneurs: The fact that there is a condition of empowerment of Porang cultivation in the surrounding district (Madiun) has preceded and has been successful. It is obviously a real threat to Ngawi District, if our empowerment is not able to compete, we are always left behind in reaching the opportunity, therefore we must be able to catch up with it by being able to compete in price and quality.
- 2) Product certification: in order to compete with foreign products, domestic Porang products are required for product certification so that its quality can be recognized internationally such as ISO and others. These conditions can be achieved beginning with actions always striving to improve the quality of Porang.
- 3) Export policy: other efforts to be able to overcome the competition with the surrounding districts, we must immediately access / make policies to facilitate Porang exports abroad.
- 4) The condition of trade liberalization: as a logical consequence of the entry of Indonesia as a member of the WTO, then the APEC and AFTA agreement then in the era of free trade will hit the State of Indonesia which later on we are not export, it is Indonesia who flooded the entry of Porang products from outside. The condition will obviously reduce even threaten us as the exporting country of Porang. Therefore it is necessary to anticipate measures such as the ability of our products to compete in quality and price compared to products from outside, so we can anticipate these threats from the outside.

c. Identification of Potential Plant Mapping Strategies Porang

Identification of Potential Plant Porang mapping strategy, including internal factors and external factors. Internal factors such as Strengths and Weaknesses, while external factors such as factors Opportunities and Threats in the cultivation Porang in Ngawi.

Identification of factors such powers: Potential planting area; Porang very high economic value; Porang has a multi-purpose in life; Conditions of land suitability; and Treatment Porang cultivation is quite simple.

Identification of weakness factors such as: length of Porang plant age; Porang seed quality; Low skills of human resources; Knowledge & Experience Low HR; and Capital weak ;.

Identification of factors such opportunities: government policy support; Support Policies related institutions; Wide open export market opportunities; Support institutions capital; and support infrastructure and transportation information.

Identification of factors threaten to: Competition among employers; Product certification; Export policies; Conditions of trade liberalization; and forest fire disasters.

d. Analysis of Potential Plant Porang Mapping Strategies

Determination of Potential Plant Porang mapping strategy starting from the stage of collecting data and information related to factors both internal and external factors that are linked to the existence of potential as an export commodity Porang plant in the district of Ngawi.

Internal Factor Analysis (IFAS) Potential Mapping Strategies Porang

From the series of data and information that has been collected can be assessed whether these factors are the strength or weakness of the diversity strategy of mapping potential Porang as export commodity crops in the district of Ngawi.

The analysis of internal factors mapping strategy Porang plants as export commodity, can be presented in Table 5.

Explanation Each - Some Strengths and Weaknesses:

Strengths Factor

- 1) The potential planting areas: from the existing data recorded in Ngawi forest land area of 12265.30 ha., And of the total crop is still cultivated intensively Porang. So the potential for crop acreage Porang still very wide, in the amount of 12265.30 hectares. To use this potential very need further empowerment, so it is a force in the development potential of aquaculture Porang.
- 2) Porang very high economic value: The economic value Porang very high compared with medicinal plants and similar, so Porang can potentially increase the income of farmers and regional revenue Ngawi. The condition is a source of motivation spirit of the performance of farmers in other words it can be as a source of potential strength in the empowerment Porang in Ngawi.
- 3) Porang has a multi-purpose in life: Due to multi point results Porang, is a potential force in empowering Porang, it must diimbangi by treatment with a more creative and innovative in a diversity of post-harvest processing Porang, in order to further accelerate the success of empowerment objectives Porang in Ngawi ,
- 4) The condition of the suitability of land: From the data potential of large forest and followed the conditions of land suitability is very suitable for cultivation Porang for land in the shade of its standing, so that the condition is a very positive force for potential cultivation Kabupayen Porang in Ngawi.
- 5) Treatment of cultivation Porang quite simple: In cultivating Porang, it turns out the technical treatment of aquaculture Porang quite simple, in the sense Porang can thrive in a variety of forestry areas without treatment cultivation complex, will be even more fertile implanted under the stand and shade for all forest plant. The condition is clearly as a potential force in the development of aquaculture Porang in Ngawi.

Weaknesses Factor

- 1) The duration of the life of the plant Porang: In Porang cultivation, planting Porang old age until they reach 3 years old, it was a weakness, especially in the capital, because newly enjoy the harvest later in the year to four. As an alternative solution to maintain the viability of farmers and their families, the condition is in need pembudidayaan good

management, for example by way of planting short-lived interlude to overcome so that no other income for 3 years Porang immature plants.

- 2) The quality of the seedlings Porang: Quality Porang seeds used are local quality, often the seeds are still looking in the hilly areas / inland, it weakens in cultivating Porang in Ngawi.
- 3) HR Skills low: average skill of farmers in cultivating Porang still low, because of the new 1-2 this year they started cultivating Porang, so it can be said is not enough to have the necessary skills. So the skill is a factor in the empowerment of weakness in cultivation Porang in Ngawi.
- 4) Knowledge and Experience Low HR: Average knowledge and experience of the farmers in cultivating Porang still low, because of the new 1-2 this year they started, so it is a factor of weakness in the cultivation empowerment Porang in Ngawi.
- 5) Low Capital: Generally Porang farming costs, big enough, according to the analysis of the calculation of the Department of Forestry and the average cumulative cost Porang farm until the age of 3 years approximately Rp. 9,500,000.00. per hectare, while the capital of the farmers is inadequate, it weakens the empowerment of cultivation Porang in Ngawi.

Analysis of External Factors (EFAS) Potential Mapping Strategies Porang

Factors - external factors are factors opportunities (opportunities) and factor threats (threats).

Explanation Each - Some Factors Opportunities and Threats:

Opportunities Factors

- 1) Support the Government's policy: through the implementation of policies and programs that do will spur increased production and marketing of products both in the facilitation and ease in accessing capital Porang cultivation.
- 2) Support Related agencies: support by relevant agencies, namely the Department of Forestry and the Department of Perhutani, the Environment Agency and local government agencies. Ngawi as regulatory policy, clearly opens up opportunities for the development and empowerment of Porang cultivation potential in the future, it is necessary to continue the working relationship and enhanced coordination between the relevant agencies.
- 3) Opportunities export market wide open: The lack of certainty in market demand, and the information for this huge demand is still much to be met, from the number of requests result Porang 200 tons per year on a certain quality standard, are still met around 7 tons per year, therefore, for the increased production of Porang besides trying to maintain the quality standards, the marketing definitely wide open, until towards the export market will be fulfilled.
- 4) Support Organization capital: banks and cooperatives as a guarantee institutions and development "back up" capital formally, for growers of agricultural Porang which requires substantial initial capital, it will be more opportunities to empower the potential development of future Porang ,
- 5) Support infrastructure & transport information: Although the condition of some roads there are less, but overall transportation infrastructure has been relatively adequate, the condition is sufficient to support the success of empowerment cultivation memperlacar Porang especially in the aspect of marketing.

Threats Factors

- 1) Competition fellow entrepreneurs: The fact that there are conditions Porang empowerment cultivation in surrounding districts (Madison) had preceded and succeeded. This is clearly a real threat for Ngawi, if we are not able to compete empowerment, alibatnya we are always behind in grabbing the opportunities that exist, therefore we should be able to catch up by being able to compete in price and quality.
- 2) Certification of products: in order to be able to compete with foreign products, the products demanded their Porang domestic product certification that quality can be

recognized internationally as ISO and others. Such conditions can be achieved starting with the action is always seeking to improve the quality Porang.

- 3) Export Policy: Another effort that we were able to overcome the competition with nearby districts, we have immediate access to / do policies to facilitate export Porang abroad.
- 4) Conditions of trade liberalization: as a logical consequence of the inclusion of Indonesia as a member of the WTO, APEC and AFTA agreements then it is in the era of free trade will hit the state of Indonesia which our exports will not, in fact Indonesia were flooded Porang entry of products from outside. Such conditions obviously would reduce even threaten us as a country pengekp Porang. Therefore it is necessary Adaiah anticipatory actions such as the ability of our products to compete in quality and price than the product from the outside, so that we can anticipate the threat from the outside.
- 5) Disaster forest fires: forest fire disasters can hardly be predicted in advance, such as volcanic eruption, tornado attacks and so on. In order that such a disaster will not happen then the necessary measures to anticipate such structuring land use, promoting reforestation and afforestation.

Of all the explanations the four factors, namely the factor of strength by a factor of weakness and the opportunity factor by a factor of threat, obtained a score of strength, namely $S = 1.80$, a score of weakness, namely $W = 1.35$, a score of chances, ie $O = 1,78$ and score threat, namely $T = 1.41$. Furthermore, it can be drawn matriknya to note that according to the SWOT diagram, generating an aggressive strategy in mapping strategies Porang crop potential, as can be seen in Figure 4, namely:

Aggressive strategy mapping Potential Porang

Equation

substitution of Equation

Enter a value x Ke Equation

So the position of the point E (0.22; 0.19), are in an aggressive strategy, ie a strategy that seeks empowerment of all the potential power plant mapping Porang possessed for crop farming profit opportunities Porang profusely.

CONCLUSION

- a. Based on the results of research that has been done, it can be concluded some of the following:

- 1) Identification of Potential Plant Porang

Based on the potential of forestry areas are spacious enough for planting Porang, supported by the Conditions of climatic conditions and the state Land and properties of plants Porang are easy to grow in the forests of Ngawi, it can be concluded that the condition areal extents of forestry in Ngawi in accordance with the technical standards requirements grow effectively Porang plants. The potential of forest land can be planted Porang 12295.30 hectares, spread across seven (7) districts and 16 (sixteen) villages,

- 2) Potential Mapping Strategies Plants Porang

Strategy mapping potential Porang plant in Ngawi in the form of an aggressive strategy (See Figure SWOT Matrix page 13), it means a strategy that seeks empowerment of all the potential power plant mapping Porang possessed for crop farming profit opportunities Porang profusely. So forests are very spacious, and very open broad prospects in the form of marketing opportunities Porang towards export markets and economic value greatly in height Porang selling price. Such conditions are ultimately support increased incomes, forest (Pesanggem) and Local Revenue. So the outcome of

this study is ultimately expected to empower the economic and mensejahtera Farmers Forest (Pesanggem) local.

b. Feedback Policy

In order to empower potential mapping Porang plant in Ngawi proposed alternative policy advice, as follows:

1) Establishing Farmers Pioneer Porang District Level

Porang farmers' groups need to be formed in each region District Pioneer Potential Development Center Aquaculture Porang. The composition of the board consists of Chairman, Secretary, Treasurer and coordinator along with their respective representatives. Plotting the board pemilihan each personnya representatives from each village located in the district area. This group oversees the working area of the region and oversees the district level officers and village-level farmer groups in its territory.

2) Establish Porang Farmers Pioneer Village Level

The composition of the board of farmer groups Porang Pioneer village level is the same as the administrators at district level, each of which represents personnya of villages that are in the region of the village concerned. Board oversees the village level farmer groups

Porang with a membership of between 25-30 farmers. Each group appointed a coordinator and deputy coordinator of the group.

The arrangement and the empowerment of the farmer group performance, with the aim to:

- a). Empower Porang cultivation in each - each region kecamatan. menurut good cultivation techniques and in accordance with local conditions, ranging from the use of quality seeds, planting up to harvesting and post-harvest treatment. So the results later in addition to increasing production, the quality and uniformity of their products, in order to certification of seeds and their products.
- b). Make demoplot at the district level as a pilot center and technical information Porang good cultivation and in accordance with local conditions, as well as doing research for the technical development of aquaculture Porang addition to conducting technical assistance for cultivation Porang local farmer groups.
- c). Establish a marketing agencies farmers Porang at the district level, as an information center market, the role conducting market products Porang jointly and simultaneously reduce competition among fellow farmer Porang, this is done so ternjamin assurance market prices, also in order to increase the bargaining power of the Porang farmers. The conditions for the anticipated market manipulation practices done by the traders / collectors local Porang. Besides, the Marketing Institute also plays a role in making packaging design and product bulletins Porang results, to better disseminate information to the investors and achieve market expansion, both at home and abroad to. Further examples of the results and information bulletins Porang products included in Center Featured Product Showroom located in Ngawi Ngawi City Centre as a center of information and transactions all superior product results in Ngawi.
- d). Forming the Capital and Risk Assurance Agency harvest failure at the district level, to support the working capital for farmers Porang during the wait for the first harvest of about 3 years. As for the risk of crop failure berperanan guarantee in case of crop failure, it is to lighten the magnitude of the losses suffered by farmers Porang.
- 5) Forest fire disaster: Forest fire disaster is almost unpredictable, such as volcano eruption, tornado and so on. In order to prevent the disaster from occurring, anticipatory measures such as land use arrangements, reforestation and reforestation are required.

From all four factor explanation, that is between strength factor with weakness factor and between opportunity factor with threat factor, got score of strength, that is $S = 1,80$, weakness score, that is $W = 1,35$, chance score, that is $O = 1,78$ and the threat score, ie $T = 1.41$. Furthermore, the matrix can be drawn that according to the SWOT diagram,

produces an aggressive strategy in the Porang plant potential mapping strategy, as can be seen in Figure 4, namely:

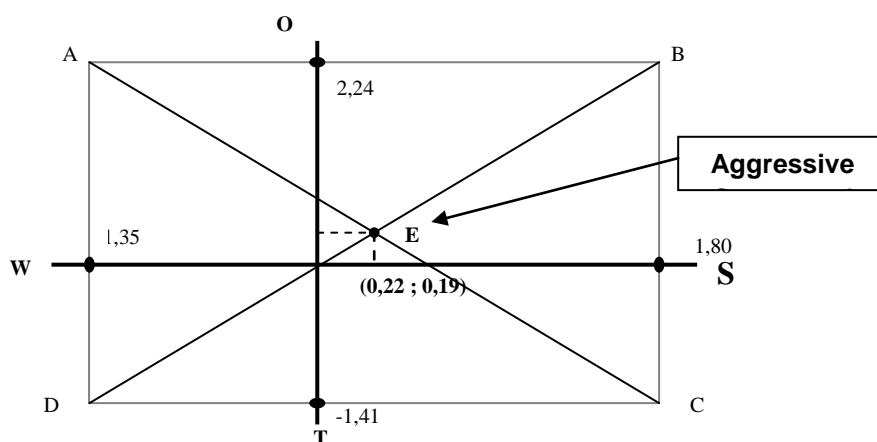


Figure 4. IFAS & EFAS Matrix of Mapping Strategy Potential of Porang Plant According to SWOT Diagram

S = (strengths) = 1.80 O (opportunity) = 1.78

W = (weaknesses) = - 1.35 T (threats) = - 1.41

Coordinate A = (-1,35; 1,78) C = (1,80; - 1.41)

B = (1,80; 1,78) D = (-1,35; - 1.41)

The SWOT equation: $(Y - Y_1) (X_2 - X_1) = (Y_2 - Y_1) (X - X_1)$

AC equation: $(Y - 1.78) (1.80 + 1.35) = (- 1.41 - 1.78) (X + 1.35)$

$(Y - 1.78) (3.15) = (- 3.19) (X + 1.35)$

$3.15 Y - 5.61 = - 3.19 X - 4.31$

$3.19 X + 3.15 Y = 5.61 - 4.31$

$3.19 X + 3.15 Y = 1.30$ (1)

The equation BD: $(Y - 1.78) (-1,35 - 1,80) = (-1,41 - 1,78) (X - 1,80)$

$(Y - 1.78) (- 3.15) = (- 3.19) (X - 1.80)$

$- 3.15 Y + 5.61 = - 3.19 X + 5.74$

$3.19 X - 3.15 Y = 0.13$ (2)

Substitution Equations (1) and (2):

$3.19 X + 3.15 Y = 1.30$

$3.19 X - 3.15 Y = 0.13$

$6.38 X = 1.43$

$X = 1.43 : 6.38$

$X = 0.22$

Enter X value into equation (1):

$3.19 (0.22) + 3.15 Y = 1.30$

$Y = (1.30 - 0.70) : 3.15$

$Y = 0.19$

So the position of point E (0.22, 0.19), is in an aggressive strategy, meaning a strategy that seeks to empower all potential powers of Porang plant mapping to gain the maximum profit opportunity of Porang planting.

CONCLUSIONS AND POLICY SUGGESTIONS

Based on the results of research that has been done, it can be concluded several things as follows:

1) Identification of Potential of Porang Plant

Based on the potential of wide forestry area for Porang planting, supported by Climatic Condition and Soil Condition and Porang's easy to grow nature in Ngawi District forest, it can be concluded that the condition of forest area in Ngawi regency is in accordance with technical standard requirement to grow effectively Porang plant. The potential of forest land that can be planted Porang 12,295.30 hectares, spread over 7 (seven) subdistricts and 16 (sixteen) villages,

2) Porang Potential Mapping Strategy

The Porang plant potential mapping strategy in Kabupaten Ngawi is an aggressive strategy (see SWOT Matrix Figure 13), meaning a strategy that seeks to empower all potential powers of Porang plant mapping to gain the maximum profitability of Porang planting. So a vast forest area, and very wide open prospect in the form of marketing opportunities Porang to export markets and have economic value is very high selling price Porang. This condition ultimately strongly supports the increase in income of forest farmers (Pesanggem) and Local Revenue. So the result of this research is ultimately expected to empower the economics and mensejahands of local Forest Farmers (Pesanggem).

2. Policy Advice

In order to empower the potential mapping of Porang plants in Ngawi District, the following alternative policy proposals are proposed:

1) Forming Porang Pioneer Farmer Group at District Level

Porang Poranger farmer groups should be established in every sub-district of Porang Potential Development Potential Development Center. Board composition consists of Chairman, Secretary, Treasurer and coordinator and their respective representatives. The plotting of the election of each member of the board is representative of each of the villages within the sub-district. Working area This group oversees the sub-district level and oversees the village-level management and farmer groups within its territory.

2) Establish Porang Pioneer Farmer Group at Village Level

The composition of the Porang Pioneer group of farmers at the village level is the same as that of the kecamatan level officials, each representing each of the sub-villages within the village. The village level administrators oversee Porang farmer groups with 25-30 peasants. Each group was appointed a coordinator and deputy group coordinator.

The arrangement and empowerment of farmer group performance, with the aim to:

- A). Empowering the cultivation of Porang in each sub-district. According to good cultivation techniques and in accordance with local conditions, ranging from the use of superior seeds, the way of planting to harvesting and post-harvest treatment. So that the results later in addition to increase production, quality and can uniform results of its production, in order to certify the seeds and the results of its production.
- B). Make demoplot at the sub-district level as a pilot center and technical information of good Porang in accordance with local conditions, and conduct research for the technical development of Porang farming in addition to technical assistance of Porang farming for local farmer groups.
- C). Establishing Porang farmers' marketing institutions at the sub-district level, as a market information center, which is involved in marketing Porang products together and at the same time reducing competition among Porang Farmers, this is done to ensure the assurance of market prices, as well as to increase the strength of bargaining power Porang farmers. The condition is to anticipate the practices of manipulating the market by local Porang traders / collectors. Besides, the Marketing Agency also plays a role in making packaging designs and bulletin products of Porang, to further disseminate

information to investors and achieve market share expansion, both inside and outside the country. Further examples of results and bulletin of Porang product information are included in Ngawi City Superior Product Showroom Center located in Ngawi City Center as the information and transaction center of all superior product in Ngawi District.

- D). Establishing Institution of Capital Assurance & Risk of Harvest Failure at sub-district level, to support working capital for Porang farmers while waiting for the first harvest about 3 years. As for the risk of failure of the harvest plays a role in ensuring if there is a crop failure, this is to mitigate the magnitude of losses experienced by Porang farmers.

Based on the research results it is suggested that the development of agrotourism in UPN campus need to carry on considering the consumers or potential consumers still have high hopes for the agrotourism plan. Increase in budget is also needed for the repair and construction of the essential facilities. This type of agrotourism also need to be developed in other areas considering the numbers are still few but the potential is great in providing people with a good and healthy recreational place.

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